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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/820,253

04/08/2004

Stuart Anthony Smithson

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35690

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01/29/2007

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EXAMINER

SURYAWANSHI, SURESH

ART UNIT

PAPER NUMBER

2115

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/820,253	SMITHSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Suresh K. Suryawanshi	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10/30/06 amendments.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,14-19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,14-19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1, 3-12, 14-19 and 21-24 are presented for examination.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhee et al (US Patent 6,804,790<sup>1</sup>; hereinafter Rhee) in view of Andrea (US Patent 5,506,545).
4. As per claim 1, Rhee discloses a method for operating a computer system comprising a first and a second computing unit [Fig. 1; processing unit 1 and processing unit 2], the method comprising selecting a first clock frequency for operation of said first computing unit, and selecting a second clock frequency for operation of said second computing unit wherein said first and said second frequencies differ one from the other by at least a predetermined bandwidth [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ].

Rhee does not expressly disclose if the first and second frequencies are function of a predetermined number. But clearly each processing unit operates at a different clock frequency and indirectly there is a relation between one processing unit's clock frequency to other processing unit's clock frequency where they differ by a multiple of a number as  $f_1 < f_2 < f_3 < \dots < f_n$ . This number could be the predetermined number. However, Andrea clearly discloses use of a thermal (random) noise source to generate a random number and therefore randomly vary the frequency of clocks [col. 1, lines 11-14, 19-23, 43-51; col. 2, lines 32-44; col. 3, lines 4-12, 53-55; col. 4, lines 9-29]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the cited references as both are directed to a computing system providing a variable frequency clock. After reading these two references, a routineer in the art will realize that generation of a different clock frequency can easily be achieved by the use of a thermal (random) noise source as disclosed by Andrea. Moreover, in view of Andrea, a routineer will be motivated to combine the cited references not only to achieve an easy way of generating different clock frequencies but also to reduce in magnitude of radiated noise emanating from clocked processing units.

5. As per claim 12, Rhee discloses a method for operating a computer system comprising a plurality of computing units [Fig. 1; processing unit 1, processing unit 2, processing unit 3, and etc.], the method comprising, selecting a plurality of different clock frequencies [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each

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<sup>1</sup> Prior art cited by the examiner in the prior office action.

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processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots f_n$ ]; allocating a different one of each of said plurality of clock frequencies to each of said plurality of computing units, wherein each of said plurality of frequencies differs from at least one other of said frequencies by a predetermined bandwidth [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots f_n$ ].

Rhee does not expressly disclose if the first and second frequencies are function of a predetermined number. But clearly each processing unit operates at a different clock frequency and indirectly there is a relation between one processing unit's clock frequency to other processing unit's clock frequency where they differ by a multiple of a number as  $f_1 < f_2 < f_3 < \dots f_n$ . This number could be the predetermined number. However, Andrea clearly discloses use of a thermal (random) noise source to generate a random number and therefore randomly vary the frequency of clocks [col. 1, lines 11-14, 19-23, 43-51; col. 2, lines 32-44; col. 3, lines 4-12, 53-55; col. 4, lines 9-29]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the cited references as both are directed to a computing system providing a variable frequency clock. After reading these two references, a routineer in the art will realize that generation of a different clock frequency can easily be achieved by the use of a thermal (random) noise source as disclosed by Andrea. Moreover, in view of Andrea, a routineer will be motivated to combine the cited references not only to achieve an easy way of generating different clock frequencies but also to reduce in magnitude of radiated noise emanating from clocked processing units.

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6. As per claim 3, Andrea discloses that said first predetermined number and said second predetermined number are each generated by a random number generator [col. 1, lines 11-14, 19-23, 43-51; col. 2, lines 32-44; col. 3, lines 4-12, 53-55; col. 4, lines 9-29].

7. As per claim 4, Rhee discloses that the predetermined minimum bandwidth is the bandwidth of a standard emission measuring device [col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4 MHz].

8. As per claim 5, Rhee discloses that the predetermined minimum bandwidth is at least 120 KHz [col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz].

9. As per claim 6, Rhee discloses that the predetermined minimum bandwidth is at least 1 MHz [col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz].

10. As per claim 7, Rhee discloses that said first unit clock frequency differs from said second unit clock frequency [col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz].

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11. As per claims 8 and 16, Rhee discloses that said number comprises an integer between 1 and a number equal to the number of computing units in the system [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ].

12. As per claims 9 and 17, Rhee discloses the invention substantially. Rhee does not disclose that the number can be determined as a function of a digit of the address of the respective computing unit. However, a routineer in the art would be able to do so as this will clearly provide a different number for each unit because each unit will have a different address. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention to utilize a function of a digit of the address of the respective processing unit to determine the number.

13. As per claim 10, Rhee discloses implementing the method as part of the start-up code for each computing unit [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; inherent to the system to setup the clock frequency of each processing unit at the start-up].

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14. As per claim 11, Rhee discloses that said first and said second clock frequency is dynamically allocated to respective computing unit on start-up or resetting of the system [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; inherent to the system].

15. As per claim 14, Andrea discloses that said is generated by a random number generator [col. 1, lines 11-14, 19-23, 43-51; col. 2, lines 32-44; col. 3, lines 4-12, 53-55; col. 4, lines 9-29].

16. As per claim 15, Rhee discloses that each unit clock frequency differs from at least one other by a multiple of the predetermined minimum bandwidth [col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz].

17. As per claim 18, Rhee discloses that each different frequency is dynamically allocated to a respective computing unit on start-up or resetting of the system [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; inherent to the system to setup the clock frequency of each processing unit at the start-up].



***Claim Rejections - 35 USC § 102***

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

19. Claims 19, 21-22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Rhee et al (US Patent 6,804,790<sup>1</sup>; hereinafter Rhee).

20. As per claim 19, Rhee discloses apparatus for start-up of a computer system comprising a plurality of computing units [Fig. 1; processing unit 1, processing unit 2, and etc.], the apparatus comprising means for setting a different clock frequency for each unit so that said units each operate at a different frequency, each frequency differing from another frequency by at least a predetermined minimum bandwidth [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ], and means for determining said predetermined minimum bandwidth as a multiple of a predetermined base frequency [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz; col. 3, lines 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ].

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21. As per claims 21, Rhee discloses allocating a predetermined number to each of said first and said second computing units and setting said first and said second unit clock frequency as a function of said number [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz; col. 3, lines 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ].

22. As per claim 22, Rhee discloses that said number is used as a multiple of the predetermined base frequency [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31; the first processing unit operates at a clock frequency of 32 KHz and the second processing unit operates at a clock frequency of 4MHz; col. 3, lines 51-62; col. 4, lines 30-32; col. 6, lines 3-7; each processing unit operates at a different clock frequency with  $f_1 < f_2 < f_3 < f_4 < \dots < f_n$ ].

23. As per claims 24, Rhee discloses that said first and said second clock frequency is dynamically allocated to respective computing unit on start-up or resetting of the system [Fig. 1; col. 2, lines 17-21, 48-49; col. 3, lines 28-31, 51-62; col. 4, lines 30-32; col. 6, lines 3-7; inherent to the system].

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24. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rhee et al (US Patent 6,804,790; hereinafter Rhee).

25. As per claim 23, Rhee discloses the invention substantially. Rhee does not disclose that the number can be determined as a function of a digit of the address of the respective computing unit. However, a routineer in the art would be able to do so as this will clearly provide a different number for each unit because each unit will have a different address. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention to utilize a function of a digit of the address of the respective processing unit to determine the number.

#### ***Response to Arguments***

26. Applicant's arguments with respect to claims 1, 3-12, 14-19 and 21-24 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

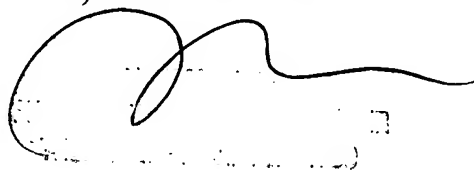
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suresh K. Suryawanshi whose telephone number is 571-272-3668. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sks

January 18, 2007

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line extending to the right.